Plan a Road Trip

Elsie and some friends are getting ready to go on a long-distance RV road trip. Use the mileage data in the table to help Elsie plan for the trip.

Mileage and Gas Used

Miles Driven (m)	300	144	600	120	432
Gallons of Gas (g)	25	12	50	10	36

Part A Graph Elsie's data on a coordinate plane. Is the relationship a proportional relationship? How do you know? Use both the table and the graph to prove whether or not the relationship is proportional.

Part B Write an equation for the data shown in the table and identify the unit rate. Explain how you found it and what it means for this situation.

Part C Elsie and her friends plan to drive 1,048 miles during their road trip. How many gallons of gas will they need for this trip? Explain how you used proportional relationships to solve this problem.

Part D Elsie's RV holds 55 gallons of gas. The RV's fuel gauge shows that the tank is one quarter full. Can Elsie drive 100 miles before she stops for gas? Justify your reasoning.

Part E Elsie watched the pump at the gas station dispense gas at a rate of $\frac{1}{2}$ gallon every $3\frac{1}{4}$ seconds. How long will it take, in minutes, to put 50 gallons of gas into Elsie's RV? Show how to use the unit rate to solve this problem.

Part F Suppose the cost of one gallon of gas is $3.23. When Elsie stops for gas, she buys a few snacks that cost $5.75. Tax is included in the gas price, but 5% tax is added to the cost of the snacks. When Elsie fills her tank with 50 gallons of gas and buys snacks, how much will she pay in all? Show your work.

Part G Elsie plans to stop for gas after the first 100 miles of the 1,048 mile trip. After that, she will stop when her gas tank has only 5 gallons remaining. Assume Elsie spends the same amount on snacks each time she stops. How much money in all will Elsie spend on gas and snacks during this trip? Show your work. Explain how you solved the problem.